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PREFACE

The First KACST-Oxford Petrochemical Forum, 2011

Peter P. Edwards · Hamid A. Almegren · Tiancun Xiao

All around us we see the remarkable advances that petrochemical technologies have brought to humankind and our society. Life expectancy, economic advancement and global mobility are all striking examples of the benefits of real ingenuity and innovation over many decades in the science and technological utilisation of fossil fuels. One also recognises that society's current energy trajectory is not sustainable; this trajectory is running alongside the critical issues of human-induced climate change and potential ecological destruction. The petrochemical sector is now rising to the challenge of global energy sustainability. The sector also needs to be more energy efficient with mounting pressure on rising feedstock prices and ever-increasing regulatory and commercial requirements.

The KACST-Oxford Forum—the first of its kind—attempted to address many of these issues facing the petrochemical technologies. It also recognised the special responsibilities that Saudi Arabia has as the world's leading petroleum and petrochemical production centre. Our 1st KACST-Oxford Forum therefore targeted not only the challenge of building the future of petrochemical technologies in a sustainable way, but also to highlight the new and exciting opportunities that such an approach brings.

Thus, whilst recognising the critical need for the development of alternative energy technologies, our vision is that the world is equally served in the short and medium terms by real advances and real innovation in developing cleaner, more efficient and more economic petrochemical production and conversion technologies. Five major thematic areas were covered:

Petrochemicals: smart and atom-economic synthesis;
Renewable, carbon–neutral synthetic fuels from CO_2;
The socio-economics of energy futures: oil, natural gas and petrochemicals;
Innovation in crude oil, synthetic oil and gas refining and processing;
Processes for value-added fine chemicals, such as new, high-performance polymers.

Our Forum was blessed by the presence and contributions of many world-leading scientists and technologists who shared our vision.

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We would like to thank our colleagues at KACST, Oxford University and the Rutherford Appleton Laboratory (RAL) and St. Catherineã s College who have worked so hard and skilfully in the organisation of the Forum, and we give a special acknowledgement to Drs Andrew Taylor (Director, RAL), Vladimir Kuznetsov, Martin Jones and Matthew Lodge and to Saud Aldrees, Saeed Al-Shiri and Mrs Linda Webb.

We also thank Professor Roger Ainsworth, Master of St. Catherine's College, Oxford for his kind support and encouragement in hosting our first KACST-Oxford Forum.

We thank the Editors-in-Chief of Applied Petrochemical Research, Professors Soliman Al-Khowaiter and Arno de

P. P. Edwards (✉) · T. Xiao
Inorganic Chemistry Laboratory, University of Oxford, Oxford, UK
e-mail: peter.edwards@chem.ox.ac.uk

H. A. Almegren
Petrochemical Research Institute, Materials and Nanotechnology Sector, King Abdulaziz City for Science and Technology, Riyadh, Kingdom of Saudi Arabia

Klerk for their kind invitation to publish the proceedings of our Forum.

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Guest Editors:

Peter P. Edwards FRS
Professor and Head of Inorganic Chemistry
University of Oxford

Dr Hamid A. Almegren, D.Phil
Director, Petrochemical Research Institute
Coordinator,
Materials and Nanotechnology Sector
King Abdulaziz City for Science and Technology
Riyadh, Kingdom of Saudi Arabia

Dr Tiancun Xiao
Senior Research Fellow
Inorganic Chemistry Laboratory
University of Oxford